

Remarks:

Claim Amendments:

Informalities:

The informalities of claims 1 through 4 have been corrected as requested.

35 U.S.C. § 35 Claim Rejections:

It is believed that the 35 U.S.C. § 112 claim rejection for claim 1 has been obviated by the amendment to claim 1 removing the words “soft material such as”.

It is believed that the 35 U.S.C. § 112 claim rejection for claim 3 has been obviated by the amendment to claim 3 replacing step h with the words “repeating step e to conclude temperature measurements”.

35 U.S.C. § 103 Claim Rejections:

Claims 3 and 4 were rejected as obvious over Clark (U.S. 4064828) in view of Friedrichs (U.S. 3054293), however, it is believed that Clark may have been misinterpreted. In the Office Action, the examiner stated:

“Clark discloses a freeze/thaw indicator comprising a foam float 2-3 sealed/positioned inside a transparent tube with a liquid. When the liquid is frozen (expanded), the float is positioned on the top inside the tube, when the temperature is below freezing, the liquid is thawing, and the float 2-3 goes down the tube. The device is to be positioned in a container. Clark states that the temperature can be evaluated quantitatively (col. 5, last line).”

In reading Clark, he states:

“The present invention is used in the following manner. Referring to Fig. 1, cap 5 with attached depressor vane 6 is snapped onto the top of the outer container 1 with the depressor vane resting on the upper edges of the float 2, holding the float beneath the solution as shown in Fig. 1. The device is then placed in a vertical position in the freezer compartment and cooled until the enclosed liquid has solidified. Solidification is obvious as the liquid becomes opaque white in color, hiding the float from view even when viewed from an upper angle through the clear upper walls of the cylinder. The liquid freezes solid in about three hours at 0° F. At this time the float is firmly locked in the submerged position by an interlocking mass of crystals and frozen solution. The cap is then removed, inverted and replaced with the depressor vane 6 extended upward outside the container as shown in Fig. 4. The device is then ready to indicate any undesirable rise in temperature above the pre-selected range between 0° and 32° F., other than the designed rise in temperature the de-frosting cycles.

In the event of malfunction of the equipment or of power failure, when the temperature rises above the desired level (preferably + 5° F.) during the period between

defrosting cycles, the solution will melt and the colored float will rise, exposing itself to view through the transparent upper portion of the device, indicating that the stored food has been subjected to unsafe storage conditions. If power resumes and refreezing occurs, the brightly colored exposed float remains in its elevated position indicating that a thawing and re-freezing cycle has occurred.” (col. 5, lines 4 thru 34).

Clearly, Clark discloses a device wherein the float is mechanically held to the bottom of a container and frozen in that position. The mechanical holding means is then removed from the frozen liquid and the float held to the bottom by the frozen mass. Upon thawing, the float rises to the top.

In the invention of this application, the float is frozen in the top of the container, not the bottom, and as the liquid slowly melts, the liquid, not the float, rises to the top because the remaining frozen mass is weighted down due to the weight of the float combined with the weight of the frozen mass. As such, the float falls into the area between the lower still frozen mass and the upper liquid mass thereby providing a means to determine the drop in temperature by reading the indicator ring with the graduations on the temperature indicator. When completely thawed, the float falls to the base of the container due to the weight of the indicator ring and the screw attaching the indicator ring to the float.

As to the quantitative evaluation of the degree of thawing that has taken place (Clark, col. 5, last line) and adding Friedrichs’ marking zones with graduations, it is unclear how that would function since Clark states:

“... the liquid is slightly above the upper lip of the cylindrical float” (col. 3, line 26) when the float is depressed, and “An outer mask 7 covers the lower half of the container so that the liquid and depressed float are hidden from view. The upper edges of this mask are arranged to extend slightly above the edges of the liquid.” (col. 3, lines 34 through 38).

Clearly, the frozen mass has to melt enough and fall to the base of the device to provide a sufficient lift to the frozen float/ice combination to cause it to rise above the liquid level of the melted mass and above the upper edge of the mask before any attempt to read the temperature level could be done.

Furthermore, as Clark’s float is surrounded by a frozen mass (locked inside of ice if you will) it is unclear how the device, in a partially unfrozen state, would allow the float to free itself sufficiently of enough of the surrounding and internal frozen mass (which is opaque white, col. 5, line 12) to show a distinct line or level in the upper half of the container by which graduations could be accurately read off of the float in the upper half of the container, which is transparent.

As such, we respectfully submit that with the aforementioned amendments and remarks relative to the prior rejections, the claims as amended should be allowed.